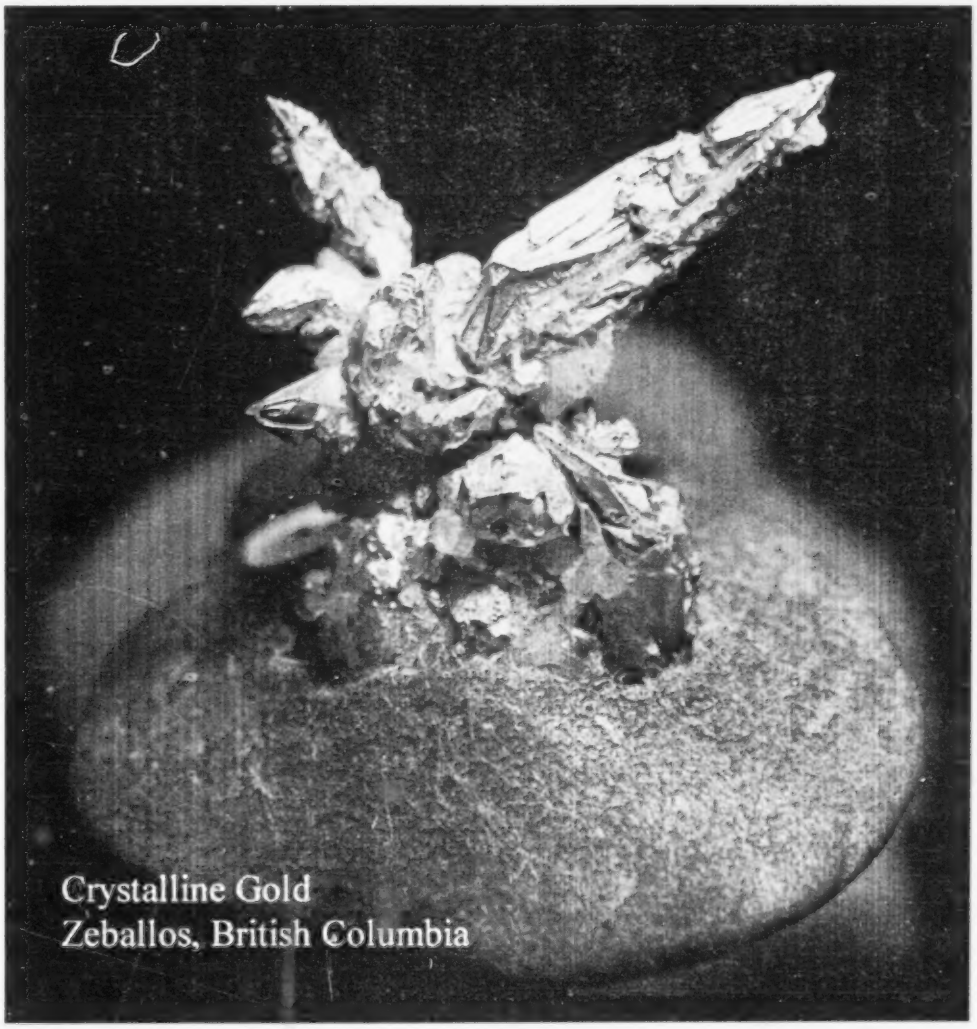
BRITISH COLUMBIA
Ministry of Energy and Mines
Resource Development Division
Geological Survey Branch

GOLD PRODUCTION AND RESOURCES IN BRITISH COLUMBIA (1858 - 2002)

By T.G. Schroeter, P.Eng./P.Geo.



Open File 2003-5
[www.em.gov.bc.ca/Mining/Geolsurv/Publications]

Open File 2003-5: Gold Production and Resources in British Columbia (1858 - 2002)

By T.G. Schroeter

Table of Contents

A summary of past gold production 1980-2002, and a brief summary by each regional geologist where the best opportunities for gold prospects in each of the regions. Contains information circular IC 2003-2 as addendum.

Introduction
An introduction to and description of the document

Gold Production in BC: 1890 - 2002
A chart of placer and lode gold production by year with mine openings and closings

Map of Auriferous Deposits in BC
Location map of selected auriferous deposits in British Columbia

Location Map of Gold Occurrences in BC
Location map of gold occurrences in BC (from Open File 2000-2)

BC Lode Gold Production by Deposit Type
Table and chart of BC lode gold production by deposit type (1890 - 2002)

BC Lode Gold Resources by Deposit Type
Table and chart of BC lode gold resources by deposit type (2003)

BC Lode Gold Producers (1890 - 2002): Top 25 by Rank
Table of top 25 gold producers in BC

BC Lode Gold Resources (2003): Top 25 by Rank
Table of top 25 gold resources (deposits/camps) in BC

Grades of BC Lode Gold Producers and Major Deposits' Total Inventory
Graphs of grades of BC lode gold producers and major deposits (kg of gold vs tonnes milled)

Snapshot of the Eskay Creek Mine
Photo and brief summary of the production and resources of the Eskay Creek Mine

Snapshot of the Kemess South Mine and Kemess North exploration project
Photos and brief summaries of the production and resources of the Kemess South Mine and the nearby Kemess North deposit / exploration project

Regional Geologist's summaries of exploration and opportunities for gold (2 pages each)

Gold Opportunities in Northwestern BC

Gold Opportunities in Northeast-Central BC

Gold Opportunities in South-Central BC

Gold Opportunities in Southwest BC

Gold Opportunities in Southeastern BC

Gold Brochure - IC 2003-2

105-05277/

INTRODUCTION

This unedited "Information Package" updates significant parts of Open File 1989-22 (*Gold Production and Resources in British Columbia*), Open File 1991-19 [*A Century of Gold Production and Reserves in British Columbia (1890 to 1990)*] and Open File 2000-2 [*Gold Production and Resources in British Columbia (1858 – 1998)*]. Production and resource statistics have been updated to the end of **2002** in most of the Figures and Tables from Open File 2002-2. In addition, the Regional Geologists have provided brief 'updates' on current exploration for gold in their respective regions (part of 'Package').

The current list of significant gold-bearing deposits includes those that have produced gold or have resources totaling greater that **5 kilograms**. It contains 299 deposits or camps (Map and Table), an alphabetical listing. Including deposits with production less than 5 kilograms of gold, MINFILE lists total production from 989 individual lode and 93 placer deposits in British Columbia. Seven deposit categories form the basis of the organization of the reports. Each deposit class and sub-class is discussed in terms of its geological characteristics, geological setting and production history.

The British Columbia Ministry of Energy and Mines cannot verify resource estimates; they are, therefore, not authoritative. The Ministry makes every effort to ensure accuracy in the information presented; however, it does not accept liability for errors or omissions.

We welcome any improvements, comments or revisions.

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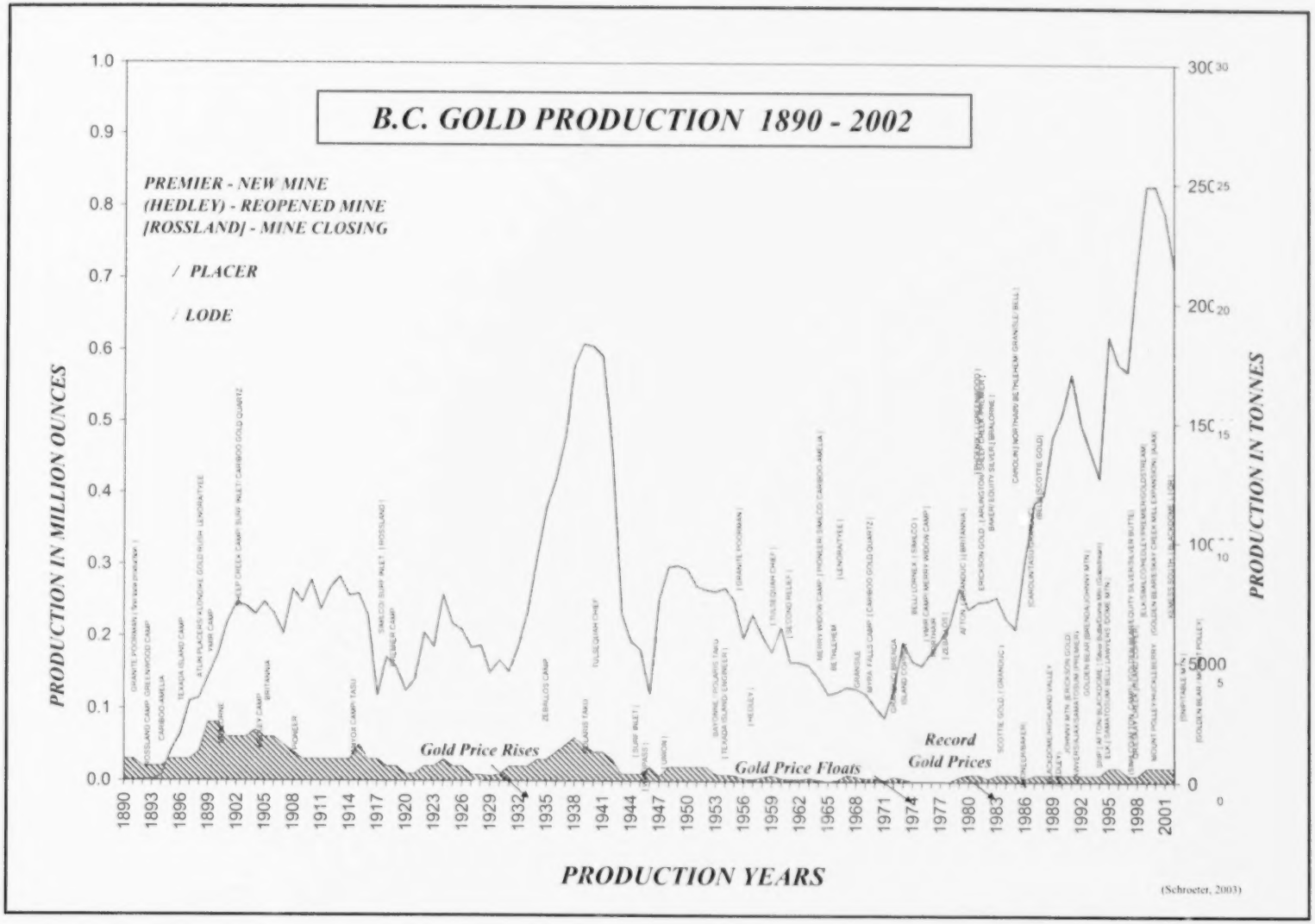
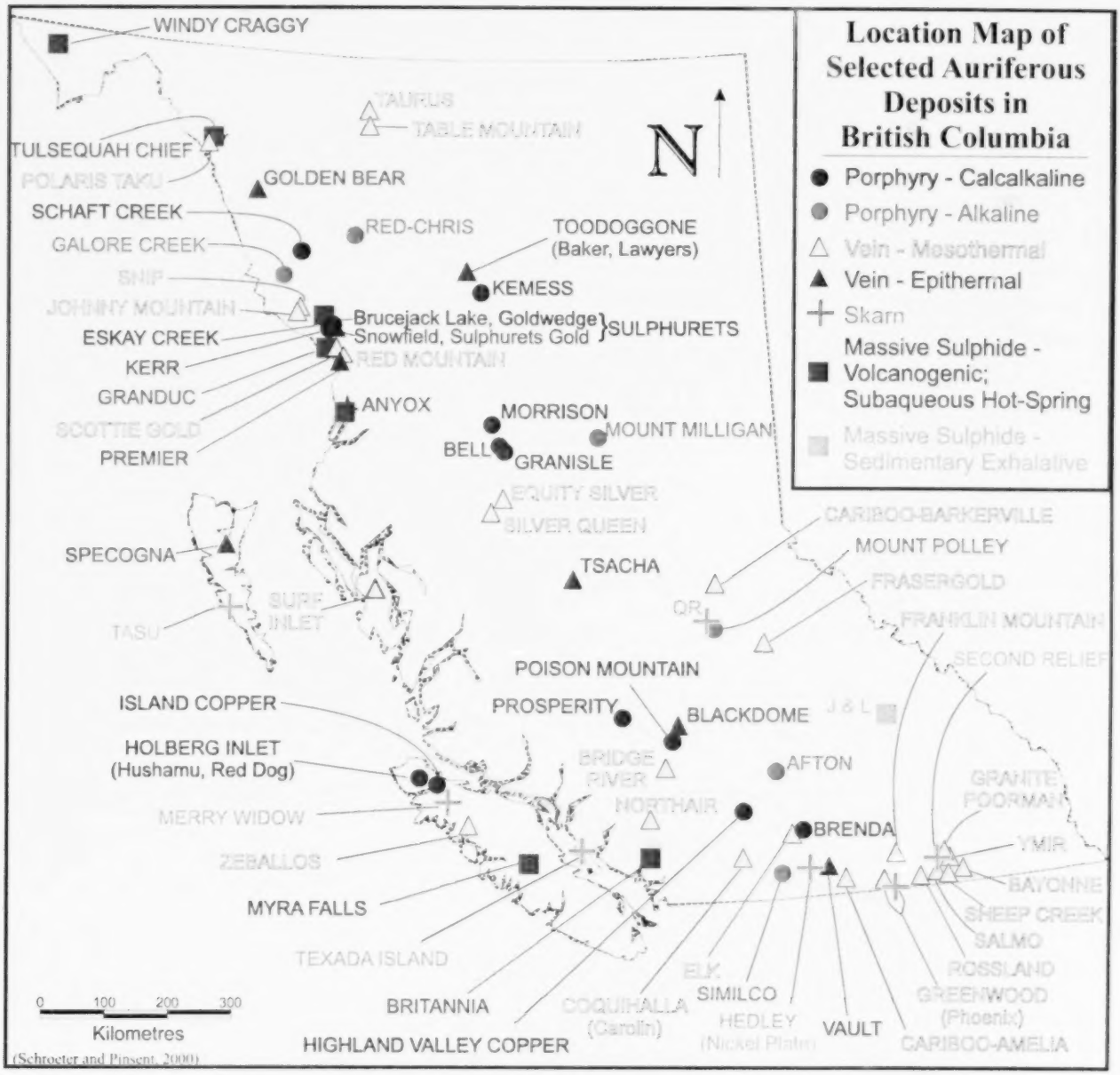
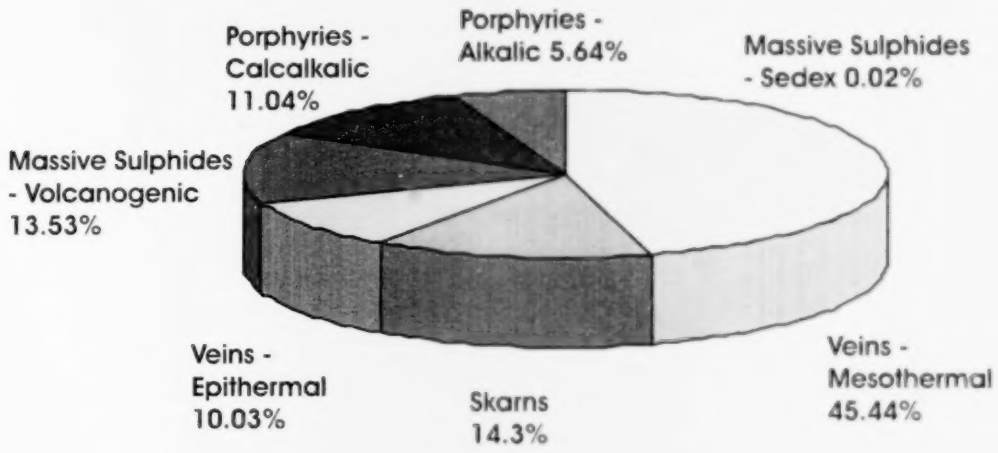

B.C. GOLD PRODUCTION 1890 - 2002
PREMIER - NEW MINE
(HEDLEY) - REOPENED MINE
[ROSSLAND] - MINE CLOSING
/ PLACER
/ LODE
PRODUCTION IN MILLION OUNCES
PRODUCTION IN TONNES
PRODUCTION YEARS
Gold Price Rises
Gold Price Floats
Record Gold Prices
(Schroeter, 2003)

AURIFEROUS DEPOSITS IN BRITISH COLUMBIA: BY DEPOSIT TYPE



B.C. LODE GOLD PRODUCTION (1890-2002): BY DEPOSIT TYPE


Porphyries - Calcalkalic 11.04%
Porphyries - Alkalic 5.64%
Massive Sulphides - Sedex 0.02%
Massive Sulphides - Volcanogenic 13.53%
Veins - Epithermal 10.03%
Skarns 14.3%
Veins - Mesothermal 45.44%

Total Production: 912,630 kilograms (29,341,700 ounces)

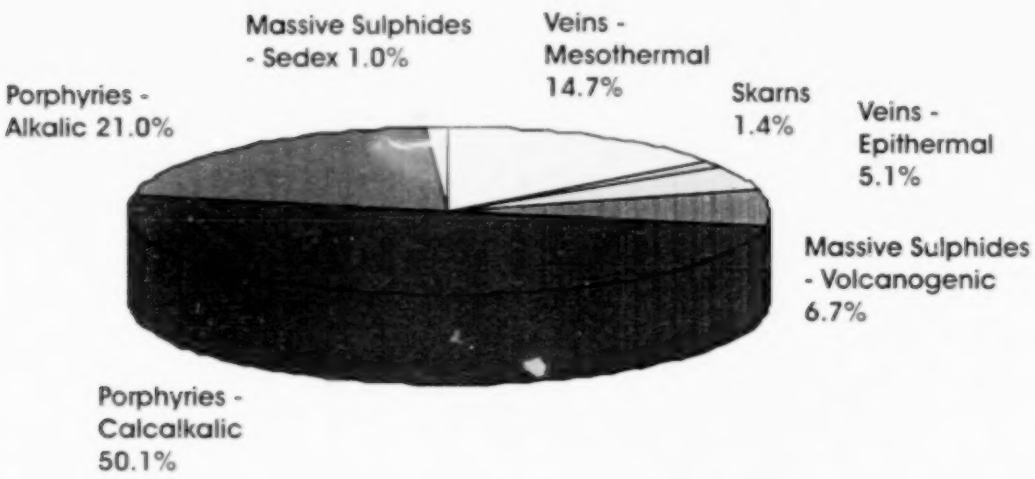
B.C. LODE GOLD PRODUCTION (1890 - 2002)
BY DEPOSIT TYPE

DEPOSIT TYPE	NUMBER OF DEPOSITS	PRODUCTION (grams)	PERCENTAGE OF TOTAL (%)
Veins - Mesothermal	428	414,711,379	45.44
Skarns	50	130,486,159	14.30
Veins - Epithermal	19	91,522,061	10.03
Massive Sulphides - Volcanogenic	17	123,433,142	13.53
Porphyries - Calcalkalic	12	100,769,366	11.04
Porphyries - Alkalic	10	51,492,565	5.64
Masssive Sulphides - Sedex	3	215,140	0.02
TOTALS:	539	912,629,812	100

(Schroeter, 2003)

Schroeter, 2003

B.C. LODE GOLD RESOURCES (2003): BY DEPOSIT TYPE


Massive Sulphides - Sedex 1.0%
Veins - Mesothermal 14.7%
Porphyries - Alkalic 21.0%
Skarns 1.4%
Veins - Epithermal 5.1%
Massive Sulphides - Volcanogenic 6.7%
Porphyries - Calcalkalic 50.1%

Total Resources: 2,452,344 kilograms (78,844,620 ounces)

B.C. LODE GOLD RESOURCES (2003)
BY DEPOSIT TYPE

DEPOSIT TYPE	NUMBER OF DEPOSITS	GOLD RESOURCES (grams)	PERCENTAGE OF TOTAL(%)
Porphyries - Calcalkalic	30	**1,228,345,729**	50.10
Porphyries - Alkalic	16	**515,334,895**	21.00
Veins - Mesothermal	149	**359,657,782**	14.70
Massive Sulphides - Volcanogenic	21	**163,525,763**	6.70
Veins - Epithermal	24	**125,590,324**	5.10
Skarns	23	**33,825,136**	1.40
Massive Sulphides - Sedex	1	**26,064,000**	1.00
TOTALS:	264	**2,452,343,629**	100

(Schroeter, 2003)

(Schroeter, 2003)

B.C. LODE GOLD **PRODUCERS** (1890-2002): Top 25 by Rank

RANK	DEPOSIT NAME / CAMP NAME (#deposits in camp)	FILE NO.	YEARS (* = producing)	**GOLD PRODUCTION (grams)**	SILVER PRODUCTION (grams)	GOLD RESOURCES (grams)	TOTAL GOLD (grams)
1	BRIDGE RIVER CAMP (5)	30	1899-1983	**129,390,995**	29,613,140	13,924,423	143,315,418
2	ROSSLAND CAMP (44)	212	1896-1995	**86,530,000**	110,240,000	15,638,903	102,168,903
3	HEDLEY CAMP (7)	111	1903-1996	**76,735,496**	18,802,842	211,172	76,946,688
4	ESKAY CREEK	74	1995-2002*	**72,528,860**	3,355,581,000	44,465,101	116,993,961
5	PREMIER CAMP (90)	195	1918-1996	**64,888,246**	1,337,373,655	6,812,800	71,701,046
6	GREENWOOD CAMP (53)	105	1893-1989	**39,977,644**	310,232,328	4,885,031	44,862,675
7	CARIBOO-BARKERVILLE CAMP (3)	38	1902-1987	**38,321,509**	4,650,641	16,902,000	55,223,505
8	ISLAND COPPER	124	1971-1995	**35,267,550**	294,105,533		35,267,550
9	SNIP	239	1991-1999	**33,316,834**	12,893,090	0	33,316,834
10	KEMESS (2)	133	1998-2002*	**33,065,818**	37,811,000	253,864,320	286,930,138
11	MYRA FALLS CAMP (3)	173	1967-2002*	**25,333,884**	834,971,100	10,675,000	36,008,884
12	SHEEP CREEK CAMP (12)	224	1899-1988	**23,101,859**	9,102,786	779,037	23,880,726
13	SIMILCO CAMP (3)	236	1910-1996	**22,841,418**	294,238,155	19,963,070	42,804,488
14	AFTON CAMP (10)	3	1899-1997	**17,121,080**	90,462,058	42,352,239	59,473,319
15	EQUITY SILVER	73	1980-1994	**15,801,709**	2,219,480,555		15,801,709
16	BRITANNIA	31	1905-1988	**15,350,561**	180,845,883		15,350,561
17	BELL	16	1972-1992	**12,885,964**	38,319,730	59,200,000	72,085,964
18	SURF INLET	255	1902-1943	**12,095,368**	6,258,235	1,653,450	13,748,818
19	MOUNT POLLEY	168	1997-2001*	**11,530,067**	7,905,000	10,753,333	22,283,400
20	GOLDEN BEAR	95	1990-2002	**10,562,757**	2,191,107	0	10,562,757
21	ZEBALLOS CAMP (18)	299	1934-1975	**9,154,249**	3,882,835	4,964,152	14,118,401
22	TABLE MTN. CAMP (2)	256	1939,1979-1999	**9,094,592**	2,987,237	876,099	9,970,691
23	HIGHLAND VALLEY COPPPER CAMP (3)	112	1963-2002*	**8,827,016**	1,427,217,800	8,874,000	17,701,016
24	YMIR CAMP (12)	297	1899-1973	**8,298,227**	42,968,544	9,003,504	17,301,731
25	BLACKDOME	20	1986-1991, 1998-1999	**7,484,211**	26,065,176	1,588,736	9,072,947
(3) - Number of deposits with a camp							
Total of top 25 producers: (90% of total producers)				**819,505,914**	10,698,199,430	527,386,370	1,346,892,130

(Schroeter, 2003)

2003 B.C. LODE TOTAL GOLD RESOURCES: TOP 25 BY RANK

RANK	DEPOSIT NAME / CAMP NAME (# of deposits)	FILE NO.	RESOURCES (tonnes)	GRADE (g/t)	RESOURCES (grams)	TOTAL GOLD (grams) production and resources
1	PROSPERITY	196	633,000,000	0.466	294,978,000	**294,978,000**
2	KEMESS CAMP (2)	133	549,366,000		253,864,320	**286,930,138**
4	MT. MILLIGAN	170	275,155,770	0.51	140,329,443	**140,329,443**
4	SULPHURETS CAMP (4)	252	39,362,530	2.708	137,900,245	**137,900,554**
5	SCHAFT CREEK	217	971,495,000	0.14	136,009,300	**136,009,300**
6	GALORE CREEK	83	284,000,000		125,537,000	**125,537,000**
7	SPECOGNA	242	33,500,000	2.11	70,685,000	**70,685,902**
8	HOLBERG INLET CAMP (2)	113	198,237,000		69,900,580	**69,900,580**
9	WINDY CRAGGY	291	297,440,000	0.2	59,488,000	**59,488,000**
10	BELL	16	296,000,000	0.2	59,200,000	**72,085,964**
11	RED-CHRIS	202	118,900,000	0.47	55,883,000	**55,883,000**
12	TAURUS CAMP (2)	261	62,406,549		49,995,729	**51,099,266**
13	KERR	135	135,000,000	0.34	45,900,000	**45,900,000**
14	POLARIS TAKU	191	3,270,000	13.7	44,799,000	**52,002,579**
15	ESKAY CREEK	74	1,300,250		44,465,101	**116,993,961**
16	AFTON	3	56,110,000		42,352,239	**59,473,319**
17	POISON MTN.	190	298,580,000		41,396,000	**41,396,000**
18	PINE	189	70,000,000	0.57	39,900,000	**39,900,000**
19	BRONSON SLOPE	32	79,000,000	0.48	37,920,000	**37,920,000**
20	COPPER CANYON	50	32,400,000	1.17	37,908,000	**37,908,000**
21	KATIE	132	200,000,000	0.17	34,000,000	**34,000,000**
22	TAM	258	7,200,000	4.11	29,592,000	**29,592,000**
23	J & L	125	3,600,000	7.24	26,064,000	**26,064,000**
24	FRASERGOLD	80	12,000,000	1.85	22,200,000	**22,200,000**
25	SIMILCO CAMP (3)	236	128,794,000	0.155	19,963,070	**42,804,488**
(3) - Number of deposits within a camp Total of top 25 resources (78% of total gold)			4,786,117,099		1,920,230,027	**2,086,981,494**

(Schroeter, 2003)

British Columbia Lode Gold Production, Resources and Total Gold Inventory (1890 - 1998)

FIGURE 1 OPEN FILE 2000-2
COMPILATION OF GOLD OCCURRENCES
IN BRITISH COLUMBIA (1890-1998)
Compiled by T. G. Schroeter, P. Eng., R. H. Pinsent, P. Geo., and M.A. Fournier
LEGEND
YUKON
N.W.T.
ALBERTA
OMINECA
INTERMONTANE
FORELAND
BELT
INSULAR
COAST
PACIFIC OCEAN
ALASKA
IDAHO
MONTANA
WASHINGTON

*Looking west over **ESKAY CREEK** mine. [Photo by T.G. Schroeter]*

ESKAY CREEK

- Owned / operated by Barrick Gold Corp. Employment: 254, incl. 103 contractors
- A "world class" subaqueous mass-sulphide hot-spring deposit, 310 km NW of Smithers
- One of the world's highest valued Au and Ag mines
- World's 5th largest Ag producer; accounts for 41% of Canada's Ag production
- Produces approximately 640 tonnes per day of which 55% is direct shipping ore (>60g/t Au Equiv.) and 45% goes through a mill flotation circuit (<25g/t Au Equiv.)
- 2002 Production: 11 157 kg (358,718 oz.) Au and 552 487 kg (17.8 M oz.) Ag, @ total operating cash cost of US $51/oz. Au, net of Ag co-product
- Mining reserves (Jan. 1, 2003) include 495 907 tonnes @ 51.8 g/t Au and 2604 g/t Ag direct shipping ore, and 805 343 tonnes @ 23.38 g/t Au and 918 g/t Ag milling ore. [Total Mineral Inventory = 7.3 M oz Au Equiv.]
- Significant late 2002 drill intersection in FW rhyolite (22 zone): 64.1 g/t Au equivalent over 4.7m (part of 80.1m zone @ 6.2 g/t Au Equiv.)
- Mine life: mid-2008

(June, 2003)

KEMESS SOUTH

- Owned and operated by Northgate Exploration Ltd. Employment: 452 workers.
- A gold-copper porphyry deposit, located 300 km northwest of MacKenzie
- Mill throughput = 50 000 tonnes per day.
- 2002 Production: 8 780 kg (282 300 oz.) of Au and 33 097 tonnes (72.9 million lbs) of Cu, @ operating cost ~ US$ 203/oz Au (net of Cu credits)
- Mining reserves (Jan. 1, 2003) are 109.4 million tonnes @ 0.234% Cu and 0.712 g/t Au [2.5 M oz Au; 564 M lbs Cu]

KEMESS NORTH

Exploration Project

- Inferred Resource (Mar '03): 442 MT @ 0.23% Cu and 0.4 g/t Au, incl. 185 MT @ 0.275% Cu and 0.511 g/t Au [~6.6 M oz Au; 2.4 B lbs Cu]
- 5.5 km N of Kemess South mine; similar geological setting

(June, 2003)

GOLD OPPORTUNITIES IN NORTHWESTERN BC

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ISSUE DATE: June, 2003

DEPOSIT TYPES and EXAMPLES

1) Copper-Gold Porphyries

Gold-enriched porphyry copper deposits formed in an oceanic island arc of Stikine terrane are preserved in the 100 by 300 km mineral-rich Iskut-Stikine district. All deposits are 190-210 Ma; several belong to the important alkalic sub-class of porphyries:

- **Galore Creek** (104G 090) Resource of 284 million tonnes @ 0.67% Cu with significant but unquantified gold.
- **Red Chris** (104H 005) Resource of 522 million tonnes @ 0.35% Cu, 0.27 g/t Au with an inner core of 118.9 million tonnes @ 0.58% Cu, 0.47 g/t Au.
- **Kerr** (104B 191) Resource of 140.8 million tonnes @ 0.75% Cu, 0.36 g/t Au.
- **Sulphurets Gold** (104B 182) contains 54.8 million tonnes @ 1.02 g/t Au.
- **Bronson Slope** (104B 077) Inferred resource of 102 million tonnes @ 0.72 g/t Au, 0.15% Cu estimated from sparse drilling.
- More opportunities: **Snowfields** (104B 179), **Copper Canyon** (104G 017), **GJ** (104G 034), **Spectrum** (104G 036), **Kaketsa** (104J 005) **Big Bulk** (103P 016).

Post accretion porphyry copper deposits occur throughout the region but are most common on the Skeena Arch, a transverse uplift roughly centred on Smithers. Deposits are hosted by 50-80 Ma Bulkley and Babine stocks and some contain appreciable gold:

- **Morrison** (93M 007) Pit resource of 71 million tonnes @ 0.47% Cu, 0.22 g/t Au.
- **Bell** (93M 001) produced 77.2 million tonnes @ 0.47% Cu, 0.26 g/t Au and contains a further resource of 70.4 million tonnes @ 0.44% Cu, 0.22 g/t Au.
- **Louise Lake** (93L 079) High-level deposit contains 50 million tonnes @ 0.3% Cu, 0.3 g/t Au; potential for enargite-gold deposit.

2) Intrusion-Related Veins

Gold +/- silver occurs with iron, copper and zinc sulphides in veins and breccias related to Stikine terrane island-arc intrusions, at their margins, in adjacent hornfels or peripheral dikes. Some are also classed as epithermal veins. Examples in the Stewart-Iskut district:

- **Snip** (104B 250) produced 1,055,000 ounces gold from 1.3 million tonnes of ore; directly associated with Bronson Slope porphyry deposit (see above).
- **Red Mountain** (103P 086) resource of 1.6 million tonnes @ 7.8 g/t Au.
- **Brucejack** (104B 193) contains 750,000 tonnes @ 15.4 g/t Au, 648 g/t Ag.
- **Premier** (104B 054) mined 1,999,989 oz gold and 1.33 million kg of silver.
- **Scottie Gold** (104B 034), **Todd Creek** (104A 001), **Willoughby** (103P 006)

Related targets: **Terrace district** (eg 103I 040), **North Toodoggone** (eg 94E 092).

3) Volcanogenic Massive Sulphide

Gold-enriched VMS deposits occur in two Stikine terrane stratigraphic settings- at the top of the Jurassic Hazelton Group volcanic arc and in a mid-Paleozoic pericrationic arc:

- **Eskay Creek** (104B 008) Production, reserves and resources total 2.94 million tonnes @ 43.25 g/t Au, 1926 g/t Ag; Eskay has unusual link to epithermal setting.
- **SIB** (104B 376) Drill intercept of 19.5 g/t Au, 1603 g/t Ag over 11.7 m.
- **Tulsequah Chief** (104K 002) Mineable reserves of 7.9 million tonnes @ 1.3% Cu, 1.2% Pb, 6.4% Zn, 101 g/t Ag, 2.4 g/t Au. Past production of 94,000 oz gold was mainly from the adjacent precious metal-rich **Big Bull** deposit (104K 008).
- More opportunities: **Foremore** (104G 148), **RDN** (104G 144), **Black Dog** (104B 377) **Illiance** belt (103P 047), **Cimadoro** (103F 052) in Wrangell terrane.

Other VMS deposits in Cache Creek, Wrangell and Stikine terranes contain modest gold: **Kutcho** (104I 060), **Granduc** (104B 021), **Anyox** (103P 021) and **Ecstall** (103H 011).

4) Mesothermal and Orogenic Gold Veins

Gold occurs in quartz +/- carbonate veins on major faults, generally in greenschist grade volcanic rocks. Coast Range deposits occur between granitic and volcanic(?) pendants.

- **New Polaris** (104K 003) South of Atlin, on a splay of the Llewellyn fault. Resource of 3.27 million tonnes @ 13.7 g/t Au. Past production of 231,600 oz gold.
- **Surf Inlet** (103H 027) Produced 389,000 oz gold from a major Coast Range shear
- **Yellow Giant** (103G 021, 024, 025, 026) Vein, skarn and stockwork zones on Banks Island total 250,000 tonnes at grades ranging from 7 to 40 g/t Au.
- **Cassiar District** (104P 012, 029, 070) Related to imbricated thrusts of Paleozoic oceanic rocks; three underground mines produced 328,000 oz gold; pit resource of 11.4 million tonnes @ 1.08 g/t Au.
- **Dome Mountain** (93L 276) Shear zone in Mesozoic volcanic rocks; resource of 201,000 tonnes @ 14.9 g/t Au.
- More opportunities: **Doc** (104B 014) and **Pavey** (104M 044) include skarn features.

5) Epithermal Deposits- Veins and Carlin-type

- **Specogna** (103F 034) Related to a young strike-slip fault on Queen Charlotte Islands; open pit resource is 52.7 million tonnes @ 1.7 g/t Au.
- **Golden Bear** (104K 079) Heap leaching of de-calcified and silicifed limestone produced 265,000 oz gold. Refractory ore yielded 217,000 oz.
- **Equity Silver** (93L 001) High-sulphidation replacement and breccia; produced 508,000 oz Au, 2.2 million kg Ag and 84 million kg Cu.
- High-sulphidation targets: **Thorn** (104K 031), **Bob Creek** (93L 009).
- Low-sulphidation targets: **Engineer** (104M 014); **Bella** (103G 028), **Uduk** (93F 057), **Hank** (104G 107), **Heart Peaks** (104K 084), **Opal Lake** (104J 001)
- Carlin targets: **Tut** (104K 080), **Slam** (104K 082)

6) Placer

- Atlin District has produced about 750,000 oz gold. No lode source is clearly identified but may be orogenic veins such as **Yellow Jacket** (104N 043).

GOLD MINERALIZATION IN NORTHEAST-CENTRAL BRITISH COLUMBIA

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Issue Date: May 22, 2003

Target/Deposit Types and Examples:

1) Porphyry Au-Cu±Mo:

- *Toodoggone - Northern Omineca Mountains:* Approx. 450 km north of Prince George. Recent development of the **Kemess South** open pit mine (Minfile 094E 094), centered on a gold-enriched calcalkalic porphyry copper deposit, and successful exploration at the nearby **Kemess North** prospect (094E 021), illustrate the potential of the camp. Production at Kemess South, since start-up in late 1998, totals 1.1 M ounces of gold and 260 M lbs of copper. Mineable reserves as of Dec. 31, 2002 were 109.4 M tonnes grading 0.712 g/t Au and 0.234% Cu. The mineral resource at Kemess North is 440 M tonnes grading 0.40 g/t Au and 0.23% Cu. Porphyry Au-Cu±Mo mineralization in the Toodoggone region is mainly associated with the E. Jurassic Black Lake intrusive suite and its co-magmatic volcanics. A number of other notable porphyry Au-Cu prospects in the area include **Pine** (094E 016), **Pil**, **Atty**, **Brenda** (094E 107) and **Red** (094D 078). Several epithermal gold systems and gold-enriched skarns are also well-known.
- *Central and Southern Omineca Mountains:* Swannell Ranges, some 300 km NW of Prince George, host a number of promising alkalic porphyry gold-copper prospects. **Lorraine-Jajay** (093N 002) is a Au-Cu+/-PGE porphyry system in the Duckling Creek Syenite Complex (E. Jurassic Hogem intrusive suite). A series of NW-trending mineralized panels (the Bishop, Upper Main and Lower Main zones) have a combined mineralized inventory of 32 M tonnes grading 0.66% Cu, 0.17 g/t Au and 4.7 g/t Ag. Selected grab samples of bornite-rich, clast-supported syenite breccia from the BM Breccia zone grade up to 38% Cu, 18.9 g/t Au, 3.4 g/t Pd and 0.66 g/t Pt. Other nearby alkalic porphyry prospects include **Misty** (093N 001), that has an inferred resource of 3 M tonnes grading 0.6% Cu, **Jan/Tam** (093N 093) with an inferred resource of 7.2 M tonnes grading 0.55% Cu and 4.11 g/t Ag. These prospects have been neither thoroughly explored nor evaluated for their gold or PGE content.
- *Nation Lakes area*: More than 60 porphyry prospects occur in area centered 190 km NW of Prince George. **Mt. Milligan** (093N 191, 194) is an alkalic porphyry Au-Cu deposit centered on two monzonite stocks that intruded and altered permeable volcanic of the L. Triassic Takla Group. A central zone of pervasive potassic alteration is associated with the bulk of the gold and copper mineralization. The deposit contains a mineral resource of 445 M tonnes grading 0.415 g/t Au and 0.215% Cu. At the **Chuchi Lake** prospect (093N 159), mineralization consists of fracture-controlled pyrite, chalcopyrite and bornite in association with magnetite in potassic and propylitic-altered Takla Group volcanics. A geological resource of 50 M tonnes grading between 0.21 to 0.44 g/t Au and 0.21 to 0.40% Cu was estimated for the deposit. Other notable gold-copper-silver porphyry/porphyry-related prospects in the area include: **Fran** (093N 207); **Tas** (093N 080); **Heath** (093N 071, 072) and **Col** (093N 101).
- *Cariboo Region*: Two deposits (mines presently on standby awaiting improved metal prices) genetically related to E. Jurassic alkalic intrusions demonstrate the high mineral potential of the Southern Quesnel Trough. The **Mount Polley** (093A 008) porphyry deposit has reserves of 32 M tonnes grading 0.357% Cu and 0.34 g/t Au and the **QR** (093A 121) skarn deposit has proven and

probable reserves of approx. 320,000 tonnes averaging 5 g/t Au. Other gold-bearing porphyry prospects in the area include **Redgold** (093A 058) and **Woodjam** (093A 078).

2) **Volcanogenic Massive Sulphides**
   - ***Frank Creek (093A 152):*** South of Cariboo Lake. Proterozoic-Paleozoic metasedimentary and metavolcanic rocks of the Snowshoe Group host several massive sulphide showings including Frank Creek. A 1.2-metre channel sample assayed 0.65% Cu, 0.14 g/t Au and 69 g/t Ag. There are numerous small lenses of massive sulphide in addition to the main bed. Nearby, the **Ace**, **Big Gulp** and **SCR** showings demonstrate regional potential.

3) **Mesothermal Veins**
   - ***Bonanza Ledge, Cariboo Gold Quartz property (093A 006):*** The historic Wells-Barkerville gold camp has recorded production of 75 million grams of gold from placer and 38 million grams from 4 major lode mines. Proterozoic-Paleozoic limy metasedimentary rocks of the Snowshoe Group host numerous quartz veins and 'pyrite-replacement' lenses that were mined intermittently since the 1930s. Drill assays from the Bonanza Ledge zone, discovered in 2000, include 24.65 g/t Au over 25.8 m; 20.79 g/t Au over 17.6 m and 10.60 g/t Au over 33.2 m. Potential extends a than 30 km of strike length.
   - ***Hawk (094C 138-140):*** Omineca Mountains. High-grade gold+/-copper veins in an alkalic porphyry gold-copper setting within the Duckling Creek syenite phase of the Hogem intrusive suite. Drilling in 1990 produced vein intersections of 19.9 g/t Au over 1.5 m and 9.3 g/t Au over 2.8 m on the AD zone. Veins identified over a 3 km strike length in 2002.
   - ***Indata (093N 192):*** Nation Lakes area. Mineralization is of two types: gold-rich polymetallic veins up to 7.6 metres wide, with assays up to 6.1 g/t Au over 1.2 m, comprise the Main zone; disseminated and stringer pyrite-chalcopyrite mineralization, with assays up to 0.20% Cu over 145.2 m, comprise the Albert Lake zone.
   - ***Jim May Creek (094C 022):*** Omineca Mtns. Polymetallic quartz veins 0.9 to 4.6 m wide and 30 to 91 m long host values up to several g/t Au and several hundred g/t Ag near historic placer gold workings.

4) **Epithermal Veins:** Nechako Plateau area southwest of Prince George.
   - ***3Ts (093F 055, 068):*** Pre-Late Cretaceous set of discrete sub-parallel veins, plus stockwork zones, measuring up to 8 metres wide. An inferred resource of 470 000 tonnes grading 7.4 g/t Au and 65.2 g/t Ag was calculated in 2002 for the main Tommy vein. Drill results from the Ted vein included an assay of 3.28 g/t Au and 1117 g/t Ag over 3.0 m.
   - ***Clisbako (093 016):*** Impressive silica flooded zones and quartz veins hosted by several north to northeast trending structures that cut a sequence of rhyolitic volcanics of the Eocene Ootsa Lake Group. Multi-gram gold assays.
   - ***Trout (093F 044):*** Bonanza-grade gold mineralization associated with drusy and banded quartz-adularia in Cretaceous Kasalka Group(?) sedimentary and volcanic rocks. Rotary drilling of the Discovery zone resulted in an assay of 3.77 g/t Au over 20 m and trench samples south of the Discovery zone assayed 8.23 g/t Au over 7 m.

5) **Skarns/Mantos:**
   - ***Lustdust (093N 009):*** About 210 km NW of Prince George, immediately west of the Pinchi fault; underlain by deformed sedimentary rocks of the Permian Cache Creek Group. Mineralization is spatially related to an Eocene monzonite stock and a swarm of feldspar megacrystic dykes. Porphyry, skarn, manto and vein mineralization developed over 3-4 km strike length. Auriferous skarn mineralization has replaced a limy basalt tuff. Drilling intersected mineralized skarn over a strike length of 700 m. Best assay to date from skarn mineralization is 36.7 g/t Au and 2.89% Cu over 9.7 m.

6) **Placer Gold:**
   - Traditional camps in the Cariboo (Likely and Keithley Creek areas, Wells-Barkerville Belt and Hixon Creek) and Omineca (McConnell Creek, Germansen Landing and Manson Creek) are still active.

GOLD OPPORTUNITIES IN SOUTH-CENTRAL BRITISH COLUMBIA

Region: South-Central British Columbia

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Issue Date: May 16, 2003

Deposit Types and Examples:

1) Porphyry Cu-Mo-Au-Ag-Pd:

- Historic production from the dormant ***Afton*** (Iron Mask) and ***Copper Mountain*** (Similco) Cu-Au camps totals about 550,000 and 734,000 oz. Au respectively.
- ***Afton Southwest*** (92INW023): Drilling beneath the Afton pit has defined a deep resource of alkalic porphyry mineralization totaling 38.7 Mt grading 1.55% Cu, 1.14 g/t Au, 0.125 g/t Pd and 3.42 g/t Ag (i.e. 600,000 t Cu and 1.4 M oz. Au) and drilling is continuing. There are numerous other early stage to advanced targets in the area include the ***Rainbow***, ***Coquihalla East***, ***Pothook***, ***Galaxy***, ***Big Onion***, ***Iron Mask***, ***DM-Audra***, ***Copper King*** and ***Ajax***.
- ***Prosperity*** (92O 041): One of the largest undeveloped Au deposits in BC, this calc-alkaline porphyry has a resource of 633 Mt grading 0.466 g/t Au and 0.253% Cu (nearly 9.5 M oz. Au and 1.6 Mt Cu).
- ***Poison Mountain*** (92O 046): Resource of 298.6 Mt grading 0.24% Cu and 0.14 g/t Au.
- ***Banbury Porphyry/Maple Leaf/Pine Knot*** (92HSE177, 046): Porphyry-related and vein style mineralization occur near Hedley. Resources total 3.6 Mt at 1.57 g/t Au in the porphyry zone and 168.5 kt at 10.3 g/t Au in the vein zone.
- ***Big Kidd*** (92HNE074): Alkalic porphyry breccia near Merritt with good Au values such as 3.09 g/t Au and 0.11% Cu over 19.46 m in hole 97-5, and 0.62 g/t Au and 0.21% Cu over 70.28 m in hole NBZ99-02.

2) Stratiform:

- ***J&L*** (82M 003): Located north of Revelstoke, this sedex (?) deposit has an underground resource of 3,607,000 tonnes grading 7.24 g/t Au, 3.93% Zn, 3.0% Pb and 81 g/t Ag. Good potential for expansion of the resource to depth.
- Precious-metal enriched VMS deposits are known in the Paleozoic Eagle Bay Assemblage including ***Homestake***, ***Kamad 7***, and ***Rea Gold*** (resource of 376 kt grading 6.1 g/t Au, 69.4 g/t Ag, 2.3% Zn, 2.2% Pb & 0.33% Cu).

3) Mesothermal Veins:

- ***Bridge River*** camp: BC's premier gold district produced 4.16 M oz. Au between 1899 and 1983; mainly from veins in the ***Bralorne-Pioneer*** underground mines (92JNE001, 004).

Currently awaiting higher gold prices, the mine has a partially refurbished mill, a Mine Development Certificate and reserves of 432 kt grading 10.6 g/t Au. Work in recent years has focused on the high-grade, near-surface ***Peter vein*** (92JNE164) on the Cosmopolitan claim. The nearby ***Minto*** camp (***Minto***, ***Wayside***, and ***Congress*** mines) produced a small amount and resources remain (e.g. 267.5 kt at 11.31 g/t Au at Congress)

- Other significant mesothermal gold prospects in the Lillooet area include the ***Elizabeth*** mine (92O 012) and ***Ample-Goldmax*** (92JNE069).
- ***Elk*** (Siwash North, 92HNE096): Located east of Merritt, this small, high-grade mine produced 16,570 t at an average grade of 91.7 g/t Au (2.67 oz/ton) between 1992-95. Indicated and inferred resources totaled 111.7 kt at 39.5 g/t Au prior to drilling of several veins in 2002-3.
- Other important vein deposits include the ***Bonaparte*** and ***Fairview*** camp (resource of 816 kt at 3.77 g/t Au).

4) Epithermal Veins:

- ***Blackdome Mine*** (092O 053): This bonanza-style, low-sulphidation vein deposit is hosted by Tertiary volcanics and has an inferred underground resource of 124,120 t grading 12.8 g/t Au and 33.7 g/t Ag. Now dormant, past production was 338,440 t at an average grade of 21.4 g/t Au and 76.0 g/t Ag. A refurbished mill is on site.
- Other advanced deposits include ***Watson Bar*** (92O 051) north of Lillooet and ***Brett*** (82LSW110), ***Dusty Mac*** mine (82ESW078) and ***Vault*** (82ESW173) in the Okanagan. The latter has a resource of 152 kt at 14 g/t Au. A grassroots discovery of epithermal vein float was made in the ***Prospect Valley*** area, west of Merritt, in late 2001. The nearby, undrilled *Top Hat* (*Blustery Mtn).* prospect may be a high-sulphidation target.

5) Other Veins:

- Small high-grade polymetallic veins occur throughout the region. Advanced prospects include the ***Windpass*** mine (92P 039). ***Pellaire*** (92O 045), and ***Rex Mountain,*** which has an indicated resource of 189,453 t at 8.57 g/t Au and 0.92% Cu.

6) Gold Skarns:

- Nearly 2.5 million oz. Au were produced from the ***Nickel Plate*** (92HSE038), ***Mascot Fraction*** (92HSE036) and other smaller gold skarn deposits in the ***Hedley*** camp between 1904-96. New prospects have been discovered on ***Panorama Ridge*** to the east.
- The ***Steep*** prospect (82M 118) northeast of Kamloops is a large (10 km long, 200 m thick) gold skarn prospect that has received only limited drilling.

<u>Untested Potential</u>

- Limited grassroots prospecting has been carried out in recent years for intrusion-related gold-bismuth deposits, similar to Pogo and Ft. Knox in Alaska. New prospects that may fit in this deposit class include ***Bizar*** (82M 267), ***GQ*** (82M 273) and ***Cam-Gloria*** (82M 266).
- Numerous unexplained Regional Geochemical Survey (silt) anomalies need follow-up.

GOLD OPPORTUNITIES IN SOUTHWEST BC

Region: Southwest British Columbia (Islands, Lower Mainland, Central Coast)

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Issue Date: January 3, 2003

Target/Deposit Type and Examples:

1. **Porphyry Cu-Mo-Au:**
   - ***Hushamu (092L240):*** Proven and Probable reserves of 173 million tonnes @ 0.27% Cu, 0.34 g/t Au and 0.009% Mo (+Re?), containing 59 million grams Au. It was purchased by Copper Resource Corp in 2002, and is located 30 km west of B.H.P.'s former Island Copper Mine on northern Vancouver Island.
   - ***Red Dog (092L200):*** Drill indicated open pit reserves of 25 million tonnes @ 0.35% Cu, 0.44 g/t Au and 0.006% Mo (+Re?), containing 11 million grams Au. Located 10 km west of the Hushamu deposit on Vancouver Island.
   - ***Giant Copper/Invermay (092HSW001/002):*** Indicated resource for both deposits of 45 million tonnes @ 0.47% Cu, 0.38 g/t Au and 11.19 g/t Ag, containing 17 million grams Au. Located on the lower mainland near the U.S. border between Hope and Princeton, and may be for sale by Imperial Metals.

2. **Massive Sulphide Cu-Pb-Zn-Ag-Au:**
   - ***Myra Falls Operation (092F071/072/073/330):*** Operating underground mine near Campbell River on central Vancouver Island has proven and probable base metal sulphide reserves of 8 million tonnes @ 1.37 g/t Au containing 11 million grams Au. Mine has produced 21 million tonnes @ 1.17 g/t Au and 25 million grams Au since 1967, and was recently for sale by Boliden Ltd.
   - ***Lenora/Lara (092B 001/129):*** Mount Sicker District near Duncan on southern Vancouver Island has produced over 1 million grams Au from 4 Au-Ag rich massive sulphide deposits. Two deposits host indicated resources totaling 850,000 tonnes @ 4.5 g/t Au containing 3.8 million grams Au.

3. **Epithermal / Hot Spring Au-Ag-Cu:**
   - ***Domineer (092F116):*** High-sulphidation epithermal veins associated with porphyry copper mineralization at Mount Washington near Courtenay on central Vancouver Island have produced low grade gold from open pits at ***Mount Washington Copper (092F117)*** and host drill indicated underground resources of 550,000 tonnes @ 6.75 g/t Au containing 3.7 million grams Au at Domineer. Both deposits are available from owner Better Resources.
4. **Mesothermal Au-Quartz, Cu-Ag, Polymetallic Veins:**
   - ***Ladner Creek/McMaster (092HNW007/018):*** Coquihalla district north of Hope on the lower mainland has produced 1.5 million grams Au from 4

underground quartz vein deposits. Two deposits host resource estimates totaling 1.8 million tonnes @ 4.16 g/t Au containing 7.5 million grams Au, primarily at Ladner Creek, also known as the Carolin Mine, owned by Athabaska Gold. Homegold Resources holds several gold occurrences.

- ***Doctors Point/Harrison Gold (092HSW071/092):*** Minor but high grade (58 g/t Au) production occurred from 3 gold deposits in the Harrison Lake area of the lower mainland. Two deposits host inferred resources totaling 2.3 million tonnes @ 3.15 g/t Au containing 7.3 million grams Au, mostly at Harrison Gold where Northern Continental is drill testing open pit targets.
- ***Privateer/Goldfield/Central Zeballos (092L008/211/212):*** 9.15 million grams Au were produced from 18 underground Au-quartz deposits in the Zeballos District on northwest Vancouver Island. Three deposits host resources totaling 395,000 tonnes @ 12.83 g/t Au containing 5 million grams Au. The district has potential for very high grade (150 g/t) Au-skarn deposits evidenced by production grades from ***Beano (092E002)*** & ***Tagore (092L006).*** Newmex Minerals and International Canalaska are the major property owners.
- ***Debbie/900/Black Panther (092F079/331/084):*** Minor gold production occurred from 4 deposits east of Port Alberni on central Vancouver Island. Three deposits host quartz veins with indicated/inferred resources totaling 500,000 tonnes @ 6.6 g/t Au containing 3.3 million grams Au.
- ***Macktush/Three Jays/WWW (092F012/140/141):*** Minor gold production occurred from the latter 2 deposits located west of Port Alberni. Macktush hosts measured resources in porphyry copper associated Cu-Ag quartz veins of 138,000 tonnes @ 18.52 g/t Au containing 2.5 million grams Au. Veins are being bulk sampled by SYMC who owns or has acquired all 3 prospects.
- ***Tommy K./Bear/Prosper (092F033/044/053):*** Minor, but high grade (71 g/t) gold production occurred from Cu-Ag quartz vein deposits in the Kennedy Lake area of central Vancouver Island. Resources at Bear and Prosper total 167,000 tonnes @ 18.06 g/t Au containing 3 million grams Au. SYMC has acquired the first two deposits, and plans bulk sampling; and Tofino prospector Walter Guppy holds Prosper, which is available for sale.
- ***Fandora (092F041):*** Minor, but high grade (47 g/t) gold production occurred from Cu-Ag quartz vein deposits 20 km. west of the Kennedy Lake area. Fandora, the most significant deposit, hosts probable and possible resources of 181,000 tonnes @ 12.74 g/t Au containing 2.3 million grams Au. The property is owned by Doublestar Resources.

5. **Fe,Cu,Au Skarns:**
   - ***Little Billie/Yew (092F105/516):*** Skarn deposits on northern Texada Island have produced 2.4 million grams Au averaging 6 g/t Au primarily as a byproduct of copper production. Two deposits host indicated and inferred resources totaling 284,000 tonnes @ 12.37 g/t Au containing 3.5 million grams Au. The owners are Consolidated Van Anda Gold and 555 Corporate.

GOLD OPPORTUNITIES IN SOUTHEASTERN BC

REGION: Kootenay, Southeast British Columbia

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TARGET/DEPOSIT TYPES AND EXAMPLES:

1) Porphyry Au±Cu±Ag:

- ***Katie (082FSW29):*** Salmo area; widespread alkaline porphyry Cu-Au mineralization within a 1.75 by 2.5 km area underlain by the Jurassic intermediate to mafic Elise volcanics and synvolcanic intrusions. Mineralization is focused in three zones with Cu grades up to 1% and Au in the range of 0.5 g/t Au.
- ***Kena (082FSW237):*** Southwest of Nelson; wide intervals (>100 m) of bulk tonnage grade gold mineralization (~1 g/t Au) and narrower zones of bonanza grade mineralization (240.1 g/t Au over 1.23 m) near the contact between the Jurassic-aged Silver King porphyry and Elise mafic to intermediate volcanics.

2) Sediment-hosted Au Related to Alkalic Intrusives

- ***Howell (082GSE037)/Crowsnest (082GSE048):*** Flathead area; altered Proterozoic-Mesozoic clastic and carbonate sediments intruded by Cretaceous trachyte-syenite intrusions. Drill results on Howell up to 124m grading 0.7 g/t Au (including 60m at 1.23 g/t Au). On the Crowsnest property trenching yielded up to 10.6 g/t Au over 16.5m and numerous mineralized intrusive boulders have been discovered, assaying up to 630 g/t Au.

3) Mesothermal Vein:

- ***Rossland Camp:*** A total of **2.78 million ounces of Au** produced from 44 Cu-Au sulphide vein deposits in the camp. Larger mines: Le Roi (082FSW093) and Centre Star (082FSW094). 1990s production from the Midnight (082F?SW119), Iron Colt (082FSW100), and Evening Star (082FSW102) mines.
- ***Sheep Creek Camp:*** 743 000 ounces Au produced from 12 Au quartz vein deposits. Larger producers: Queen (082FSW048), Reno (082FSW036) and Kootenay Belle (082FSW046).
- ***Ymir Camp:*** 267 000 ounces Au produced from Ag-Au-Pb-Zn veins with 290 000 ounces of un-mined resources remaining. An important Ag producer (1.4 million ounces Ag), larger mines in the camp included the Ymir (082FSW074) and Yankee Girl (082FSW068).

4) Epithermal Veins:

- ***Tam O'Shanter (082ESE130):*** Greenwood Camp; low-sulphidation epithermal quartz-pyrite veins along Tertiary faults - 3 metres at 6.53 g/t Au and 0.83% Cu from 1992 drilling.

5) Skarns/Mantos:

- ***Greenwood Camp Skarns:*** A total of 1.2 million ounces of gold produced from 12 deposits. The largest was the Phoenix Mine (082ESE020) from which total production, between 1900 and 1978, was 21 552 284 tonnes of ore containing 911 184 ounces of Au, 5.9 million ounces Ag, and 235 693 tonnes of copper.

6) Placer:

- ***Perry Creek (082GNW067):*** Reported production, mostly 1874-1895, of 3338 ounces Au; unofficial estimates of 200 000 to 300 000 ounces Au production.
- ***Wildhorse Creek:*** Reported production, 1874-1945, of 41,858 ounces Au; unofficial estimates of +1 000 000 ounces Au production.

NEW/RECENT DISCOVERIES:

- ***Bar-Lookout Property:*** High-grade Au mineralization associated with quartz-healed breccias and gouge along a sediment-syenite contact (up to 15.8 g/t total Au over 0.5 metres); lower grade Au mineralization related to syenite-hosted quartz sulphide stockworks.
- **Gold Canyon:** Polymetallic massive suphide lenses in hornfelsed metasediments east of Burton assaying up to 5.86 g/t Au over 1.7 metres.
- **Thea 17:** Excavator trenching in 2002 exposed this silicified shear zone in Middle Aldridge clastic rocks southwest of Cranbrook over a strike length of 200 metres. Channel samples assayed up to 14.5 g/t Au over 4 metres. The zone remains open in all directions.

AREAS OF POTENTIAL AND CURRENT/RENEWED ACTIVITY:

- ***Greenwood Camp:*** Gold City Industries Ltd has acquired the Lexington-Lonestar and Winnipeg Golden Crown properties, both of which have defined Au-Cu resources, as well as a number of adjacent properties with high exploration potential. It intends to use the Roberts Mill, near Greenwood, to process bulk samples and ultimately as a central milling facility.
- ***Franklin Camp:*** Tuxedo Resources Ltd. is exploring the historical Franklin Camp, 60 kilometres north of Grand Forks, for epithermal Au-Ag deposits. Their property covers the historical Union Mine (122,000 tonnes @ 14 g/t Au & 353 g/t Ag). The recent Emanuel Creek discovery (intercepts up to 1.28 oz/t Au over 104 feet) by Kinross Gold Corporation in Washington State has increased exploration activity in the Boundary District for Tertiary epithermal deposits.
- ***Slocan Camp:*** Orphan Boy Resources optioned the Willa Au-Cu-Ag deposit near Silverton in 2002 and is aggressively proceeding with a multifaceted feasibility study to examine the viability of underground mining of the deposit and the trucking of ore to its Goldstream mill complex north of Revelstoke for processing.
- ***Nelson-Salmo Porphyry Au-Cu Belt:*** Kinross Gold Corporation is earning a 60% interest in the Kena property from Sultan Minerals Inc. The companies completed a major drilling and surface exploration program during 2002 and were successful in identifying several new mineralized zones. They intend to continue to explore their large land package in 2003 with an initial proposed budget of $1.12 million.
- ***Cranbrook Gold Camp:*** Chapleau Resources Ltd. is currently drilling its Bar-Lookout property near Cranbrook where Au mineralization occurs along the Cranbrook fault system in association with alkaline intrusive rocks. It is also planning a significant trenching and drilling program for the Zinger Au project in the Perry Creek area. Klondike Gold Corp will explore the St. Joe property east of the Bar-Lookout and will drill-test the Thea 17 (see above), as well as the Quartz Mountain and Prices Pit properties in the Perry Creek area.
- ***Flathead Area:*** Goldrea Resources Corp. is planning surface exploration and drilling programs on its Howell and Crowsnest Au properties (see above) in the Flathead basin, which they optioned from Eastfield Resources Ltd. in 2002.

B.C. Gold Deposits

The British Columbia Ministry of Energy and Mines MINFILE database lists nearly 1000 individual lode and 95 placer deposits in the province. Total lode gold (1890-2002) and placer gold (1858-2002) production amounts to 29.3 million ounces and 5.5 million ounces, respectively. The top 25 producers including the **Bridge River**, **Rossland**, **Hedley**, **Premier**, **Greenwood** and **Cariboo-Barkerville** camps and the **Eskay Creek, Island Copper**, **Snip** and **Kemess South** mines, which have each produced in excess of one million ounces, account for 90% of total production.

Total in-ground gold resources currently stand at 78.8 million ounces. Resources listed from 264 deposits, categorized as a percentage by deposit type, are: 71% porphyries; 20% veins; 7.7% massive sulphides and 1.4% skarns. Twenty-one deposits each contain in excess of 1 million ounces of gold.

Porphyries

The exploration and development of porphyry deposits during the 1960s and 1970s had a profound effect on the mining community in British Columbia. Subsequent exploration for these polymetallic Cu-Mo-Au-Ag deposits has built up an impressive database for B.C.. Currently, gold resources are 56 M oz from 13 alkalic and 27 calcalkalic porphyries. Significant examples include: **Prosperity**, **Kemess North**, **Mt. Milligan**, **Galore Creek**, **Schaft Creek**, **Red-Chris**, **Afton**, **Kerr** and **Sulphurets Gold**. New discoveries of intrusion-related gold include **Kena** and **Thorn**.

KEMESS SOUTH

- Owned and operated by Northgate Exploration Ltd. Employment: 452 workers.
- A gold-copper porphyry deposit, located 300 km northwest of MacKenzie
- Mill throughput = 50 000 tonnes per day.
- 2002 Production: 8 780 kg (282 300 oz.) of Au and 33 097 tonnes (72.9 million lbs) of Cu, @ operating cost ~ US$ 203/oz Au (net of Cu credits)
- Mining reserves (Jan. 1, 2003) are 109.4 million tonnes @ 0.234% Cu and 0.712 g/t Au [2.5 M oz Au; 564 M lbs Cu]

KEMESS NORTH

Exploration Project

- Inferred Resource (Mar. 03): 442 MT @ 0.23% Cu and 0.4 g/t Au, incl. 185 MT @ 0.275% Cu and 0.511 g/t Au [~6.6 M oz Au; 2.4 B lbs Cu]
- 5.5 km N of Kemess South mine; similar geological setting

(June, 2003)

Looking west over ESKAY CREEK mine. [Photo by T.G. Schroeter]

ESKAY CREEK

- Owned / operated by Barrick Gold Corp. Employment: 254, incl. 103 contractors
- A "world class" subaqueous mass-sulphide hot-spring deposit, 310 km NW of Smithers
- One of the world's highest valued Au and Ag mines
- World's 5th largest Ag producer; accounts for 41% of Canada's Ag production
- Produces approximately 640 tonnes per day of which 55% is direct shipping ore (>60g/t Au Equiv.) and 45% goes through a mill flotation circuit (<25g/t Au Equiv.)
- 2002 Production: 11 157 kg (358,718 oz.) Au and 552 487 kg (17.8 M oz.) Ag, @ total operating cash cost of US $51/oz. Au, net of Ag co-product
- Mining reserves (Jan. 1, 2003) include 495 907 tonnes @ 51.8 g/t Au and 2604 g/t Ag direct shipping ore, and 805 343 tonnes @ 23.38 g/t Au and 918 g/t Ag milling ore. [Total Mineral Inventory = 7.3 M oz Au Equiv.]
- Significant late 2002 drill intersection in FW rhyolite (22 zone): 64.1 g/t Au equivalent over 4.7m (part of 80.1m zone @ 6.2 g/t Au Equiv.)
- Mine life: mid-2008

(June, 2003)

Veins

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BRITISH COLUMBIA

Ministry of Energy and Mines
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The British Columbia Ministry of Energy and Mines MINFILE database lists nearly 1000 individual lode and 95 placer deposits in the province. Total lode gold (1890-2002) and placer gold (1858-2002) production amounts to 29.3 million ounces and 5.5 million ounces, respectively. The top 25 producers including the **Bridge River**, **Rossland**, **Hedley**, **Premier**, **Greenwood** and **Cariboo-Barkerville** camps and the **Eskay Creek**, **Island Copper**, **Snip** and **Kemess South** mines, which have each produced in excess of one million ounces, account for 90% of total production.

Total in-ground gold resources currently stand at 78.8 million ounces. Resources listed from 264 deposits, categorized as a percentage by deposit type, are: 71% porphyries; 20% veins; 7.7% massive sulphides and 1.4% skarns. Twenty-one deposits each contain in excess of 1 million ounces of gold.

Porphyries

The exploration and development of porphyry deposits during the 1960s and 1970s had a profound effect on the mining community in British Columbia. Subsequent exploration for these polymetallic Cu-Mo-Au-Ag deposits has built up an impressive database for B.C.. Currently, gold resources are 56 M oz from 13 alkalic and 27 calcalkalic porphyries. Significant examples include: **Prosperity**, **Kemess North**, **Mt. Milligan**, **Galore Creek**, **Schaft Creek**, **Red-Chris**, **Afton**, **Kerr** and **Sulphurets Gold**. New discoveries of intrusion-related gold include **Kena** and **Thorn**.

KEMESS SOUTH

- Owned and operated by Northgate Exploration Ltd. Employment: 452 workers.
- A gold-copper porphyry deposit, located 300 km northwest of MacKenzie
- Mill throughput = 50 000 tonnes per day
- 2002 Production: 8 780 kg (282 300 oz.) of Au and 33 097 tonnes (72.9 million lbs) of Cu. @ operating cost = US$ 203/oz Au (net of Cu credits)
- Mining reserves (Jan. 1, 2003) are 109.4 million tonnes @ 0.234% Cu and 0.712 g/t Au [2.5 M oz Au, 564 M lbs Cu]

KEMESS NORTH

Exploration Project

- Inferred Resource (Mar. 03): 442 MT @ 0.22% Cu and 0.3 g/t Au (ie. 185 MT @ 0.27% Cu and 0.511 g/t Au [~6.6 M oz Au, 2.4 B lbs Cu])
- 5.5 km N of Kemess South (new, similar geological setting)

(June, 2003)

Looking west over ESKAY CREEK mine. [Photo by T.G. Schroeter]

ESKAY CREEK

- Owned / operated by Barrick Gold Corp. Employment: 254, incl. 103 contractors
- A "world class" subaqueous mass-sulphide hot-spring deposit, 310 km NW of Smithers
- One of the world's highest valued Au and Ag mines
- World's 5th largest Ag producer; accounts for 41% of Canada's Ag production
- Produces approximately 640 tonnes per day of which 55% is direct shipping ore (>60g/t Au Equiv.) and 45% goes through a mill flotation circuit (>25g/t Au Equiv.)
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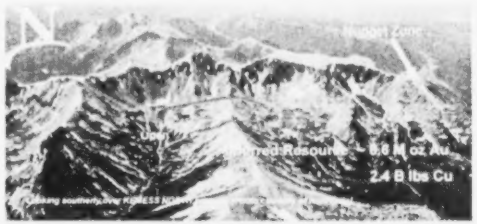

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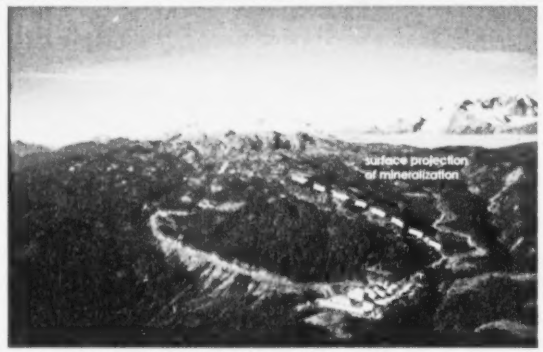

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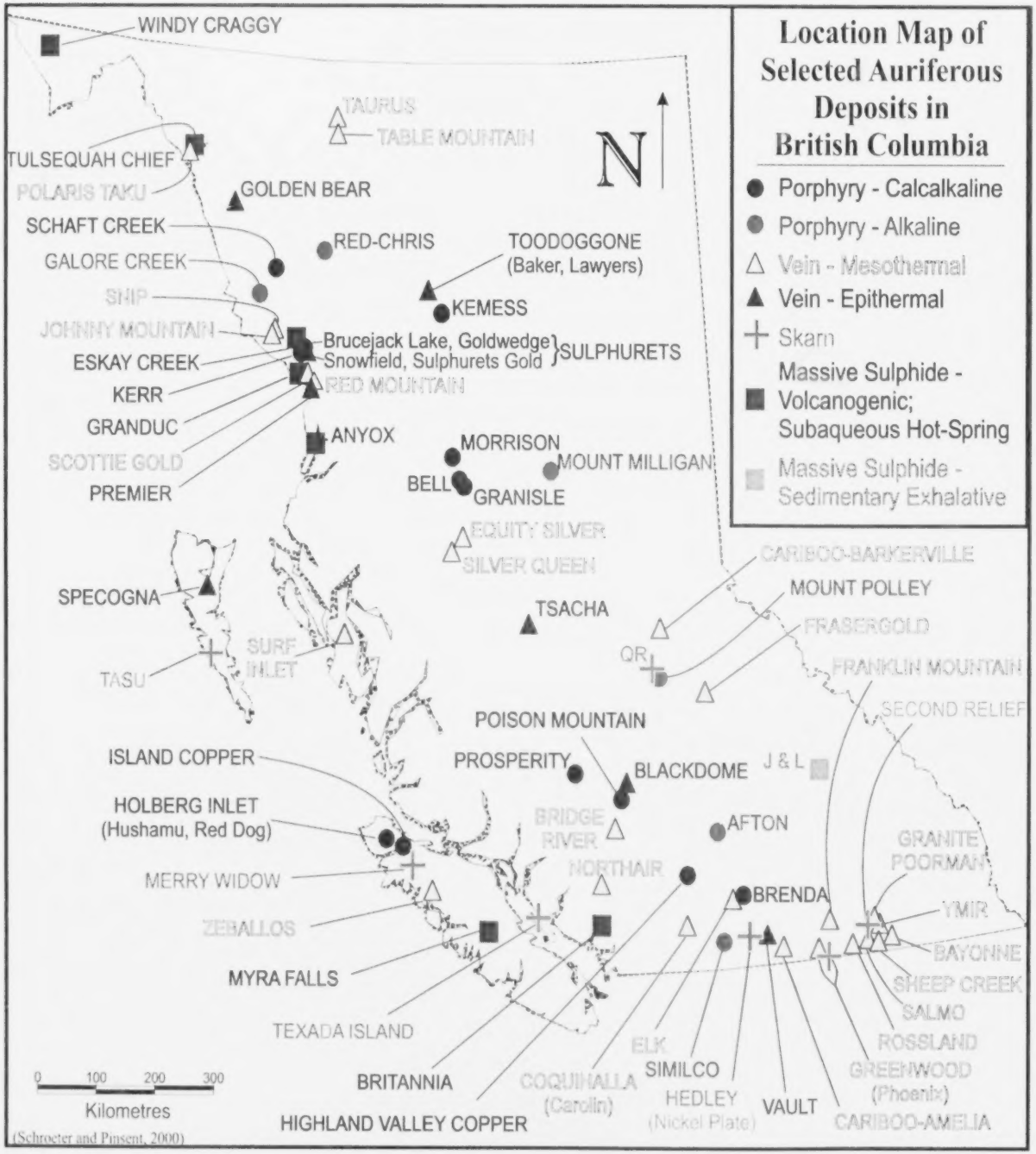
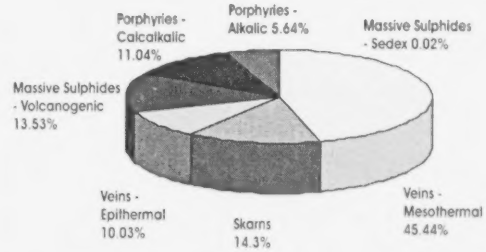


Location Map of Selected Auriferous Deposits in British Columbia

- Porphyry - Calcalkaline
- Porphyry - Alkaline
- Vein - Mesothermal
- Vein - Epithermal
- Skarn
- Massive Sulphide - Volcanogenic; Subaqueous Hot-Spring
- Massive Sulphide - Sedimentary Exhalative

B.C. LODE GOLD PRODUCTION (1890-2002): BY DEPOSIT TYPE


Porphyries - Calcalkalic 11.04%
Porphyries - Alkalic 5.64%
Massive Sulphides - Sedex 0.02%
Massive Sulphides - Volcanogenic 13.53%
Veins - Epithermal 10.03%
Skarns 14.3%
Veins - Mesothermal 45.44%

Total Production: 912,630 kilograms (29,341,700 ounces)

B.C. LODE GOLD PRODUCERS (1890-2002): Top 25 by Rank

DEPOSIT NAME / CAMP NAME (# deposits in camp)	GOLD PRODUCTION (grams)	SILVER PRODUCTION (grams)	GOLD RESOURCES (grams)	TOTAL GOLD (grams)
BRIDGE RIVER CAMP (5)	129,390,995	29,613,140	13,924,423	143,315,418
ROSSLAND CAMP (44)	86,530,000	110,240,000	15,638,903	102,168,903
HEDLEY CAMP (7)	76,735,496	18,802,842	211,172	76,946,688
ESKAY CREEK	72,528,860	3,355,581,000	44,465,101	116,993,961
PREMIER CAMP (90)	64,888,246	1,337,373,655	6,812,800	71,701,046
GREENWOOD CAMP (53)	39,977,644	310,232,328	4,885,031	44,862,675
CARIBOO-BARKERVILLE CAMP (3)	38,321,509	4,650,641	16,902,000	55,223,505
ISLAND COPPER	35,267,550	294,105,533		35,267,550
SNIP	33,316,834	12,893,090	0	33,316,834
KEMESS (2)	33,065,818	37,811,000	253,864,320	286,930,138
MYRA FALLS CAMP (3)	25,333,884	834,971,100	10,675,000	36,008,884
SHEEP CREEK CAMP (12)	23,101,859	9,102,786	779,037	23,880,726
SIMILCO CAMP (3)	22,841,418	294,238,155	19,963,070	42,804,488
AFTON CAMP (10)	17,121,080	90,462,058	42,352,239	59,473,319
EQUITY SILVER	15,801,709	2,219,480,555		15,801,709
BRITANNIA	15,350,561	180,845,883		15,350,561
BELL	12,885,964	38,319,730	59,200,000	72,085,964
SURF INLET	12,095,368	6,258,235	1,653,450	13,748,818
MOUNT POLLEY	11,530,067	7,905,000	10,753,333	22,283,400
GOLDEN BEAR	10,562,757	2,191,107	0	10,562,757
ZEBALLOS CAMP (18)	9,154,249	3,882,835	4,964,152	14,118,401
TABLE MTN. CAMP (2)	9,094,592	2,987,237	876,099	9,970,691
HIGHLAND VALLEY COPPER CAMP (3)	8,827,016	1,427,217,800	8,874,000	17,701,016
YMIR CAMP (12)	8,298,227	42,968,544	9,003,504	17,301,731
BLACKDOME	7,484,211	26,065,176	1,588,736	9,072,947
	819,505,914	10,698,199,430	527,386,370	1,346,892,130

(Schroeter, 2003)